Lake Winnebago
Inter-Agency Regulation Meeting Minutes
27 October 2009

1. **Introduction** The U.S. Army Corps of Engineers (USACE), Detroit District held its annual inter-agency regulation meeting at the Radisson Paper Valley Hotel in Appleton, Wisconsin. Mr. Michael O'Bryan, Chief of Engineering and Technical Services for the USACE, Detroit District, called the meeting to order at approximately 9:15 a.m.
   Mr. O'Bryan introduced Mr. Tom Buchholz of the WiDOT who gave a special presentation on the state's Highway 41 Bridge Project at the request of Ms. Melissa Kok from Congressman Petri's Office. Mr. Buchholz stated that part of the state's $510M project includes the US 41 highway crossing at Lake Butte des Morts in Oshkosh. The major portion of the project entails increasing the bridge driving lanes from 4 to 8 lanes. Mr. Buchholz stated that the bridge project would be completed in 2013.
2. **Attendees** A list of attendees is included at the end of the minutes.

3. **Presentation of the agenda** Mr. O'Bryan opened the meeting with introductory remarks and self-introduction of all attendees. He then summarized the meeting agenda, which included a basin overview, 2008-2009 maintenance and repair work, precipitation and weather conditions, a summary of the 2008-2009 water level regulation activities, and a presentation on the 2009-2010 water level strategy. The meeting continued with presentations by Mr. David Barilovich, Mr. James Bonetti, Mr. Robert Starks and Mr. John Allis each addressing their areas of expertise.

4. **Lake Winnebago basin and controls** Mr. David Barilovich, from the Detroit District Office described the 6,430 square mile Fox-Wolf-Winnebago watershed and its unique characteristics. He stated that within the basin, 2 major rivers flow into Lake Winnebago. He noted that the Wolf River originates in Forest County to the north and flows southerly through Lakes Poygan, Winneconne and Butt des Morts into Lake Winnebago. The Upper Fox River originates in Green Lake County, flows through Green Lake and Winnebago Counties and meets the Wolf River in Oshkosh before flowing into Lake Winnebago.

5. **Lake Winnebago Controls** Mr. Barilovich stated that the Federal dam at Menasha and the private dam at Neenah are the control points for outflow from Lake Winnebago. Flows released from these two dams discharge into the head of the Lower Fox River. He pointed out the tainter and needle gates as well as the spillways at both dams. Mr. Barilovich further defined how the Fox River Sub-Office crew operates the 6 gates at the Menasha dam while Neenah Paper operates the 14 gates on the dam in Neenah through coordination with the Detroit District. Mr. Barilovich noted that since the Neenah dam is private, a 1-day notice to Neenah Paper is preferred to make gate changes because Neenah Paper has to mobilize their contractor to make any gate

changes at the Neenah dam. Mr. Barilovich also noted that Lake Winnebago, with the lake level at the crest of the Menasha dam, is about 206 square miles, and is roughly 30 miles long, 10 miles wide and has a maximum depth of 20 ft.

6. **Lake Winnebago Stakeholders** Mr. Barilovich presented an overview of the over 30 major stakeholders located along the 39-mile long Lower Fox River. The users include the Neenah Water Plant, Sonoco U.S. Paper Mills, SCA Tissue North America, Kimberly Clark-Neenah Paper, We Energies, Fox River Papers, Kaukauna Utilities, , Thilmany Papers and Water Board Warriors, to mention a few. Mr. Barilovich indicated that there are many diverse interests that have competing uses with opposing ideas with some benefitting one and not the other. Mr. Barilovich emphasized that the USACE's job in the daily regulation of Lake Winnebago is to balance the needs and concerns of all stakeholders.

7. **Locks on the Lower Fox River** Mr. Bob Starks, of the Fox River Navigational System Authority gave an overview of on-going Fox River Locks Restoration and outlined the Lower Fox River Locks Operation Schedule. Mr. Starks reported that the DePere, Little Kaukauna and Menasha Locks have been operating and just underwent annual maintenance. The four locks in Appleton and the Cedars lock have been restored and have operated intermittently the last two years. Also, the Little Chute Guard Lock, Little Chute Lock and Combined Locks were restored in 2009. The Kaukauna Lock #5 will be restored in 2010. The restoration of the remaining four locks at Kaukauna will commence in 2011 and proceed at a rate of one lock per year, as funds are available. In addition, Mr. Starks said the Aquatic Invasive Species Barrier at Rapide Croche will be maintained. A plan for a transfer/cleansing station is underway and, when completed, will be subject to public and WDNR review. Finally, Mr. Starks mentioned that the DePere, Little Kaukauna and Menasha Locks will be operated during the regular 2010 navigation season starting around the second week of May and continuing through the first weekend of October.

8. **2007-2008 Maintenance and Repair Work** Mr. James Bonetti, Chief of the Fox River Sub-Office, gave an overview of the maintenance and repair work that was conducted in the Fox-Wolf-Winnebago watershed this past year. He highlighted repairs of the DePere and Little Chute dams where the major concerns were with the concrete cracking at the gate anchorages (trunnions pins). Mr. Bonetti also showed numerous photographs of the on-going gate automation project at the Kaukauna dam. He noted the sophistication of the operation and emphasized how useful dam automation, with respect to the utilization of field personnel, will be in the future. Finally, Mr. Bonetti discussed the PCB cleanup being conducted by the EPA at Little Lake Butte des Morts, Little Kaukauna and DePere.

9. **Basin Data Collection** Mr. John Allis, Chief of the Watershed Hydrology Branch, noted the locations of the data collection points spread throughout the Winnebago basin. He stated that the ten data collection points collect hourly stage and water level information which is useful in the UASCE daily regulation of Lake Winnebago. Mr. Allis noted that just recently water temperature data reporting was added to four data

collection points at Lake Poygan, Menasha, Oshkosh, and Fond du Lac. He concluded by showing how these data are posted on the USACE website and noted that this additional information will help us in calculating evaporation for use in regulation activities on Lake Winnebago and the rest of the Fox-Wolf system.

10. **Basin Conditions.** Mr. Allis reviewed basin conditions for the 2008- 2009 regulation period. He highlighted the Lake Winnebago snowfall for the winter of 2008-2009. He discussed a graphic that showed that the 40 inches of snow received in December was well above average as compared to the 8-inch to 12-inch snowfall totals for the months of January and February. Mr. Allis presented a graphic depicting the 2008-2009 Lake Winnebago Basin-Wide Precipitation. He noted that the precipitation was above average for December and for the March-May period, while the precipitation for all other months were below average. Mr. Allis outlined how available precipitation forecast data are used to make regulation decisions in the event of a storm. He showed how one particular 12-hr precipitation forecast predicted a significant event one day and fizzled out to essentially nothing the next day. Addressing severe winter conditions, Mr. Allis noted that ice can cause damage to private structures around the lake. Mr. Allis presented slides showing Lake Winnebago with full ice cover late in March and ice conditions a week later. He noted that warmer conditions in the spring along with rains may change the lake conditions drastically in just a week's time. He also discussed slides depicting the melting of the ice cover on Lake Winnebago and several ice shoves caused by strong winds during the melting process.

11. **Lake Winnebago Water Levels 2007-2008** Mr. John Allis presented numerous slides outlining the USACE target goals vs. the actual Lake Winnebago water levels with the number of gates open for the October 2008-September 2009 period. The slides showed the gate activities beginning in the fall of 2008 and running through ice formation in December, winter drawdown, spring fill-up and regulation activities during the navigation season of 2009. Key regulation events and dates to note include:

    a. October 2008 - December 2009: Adhered mostly to target. Only 1 gate change made during a 2 month span.

    b. According to the WDNR, Lake Winnebago achieved complete ice cover on 5 December 2008. At that time Lake Winnebago had a few inches of ice.

    c. 8 January 2009: 2009 Winter Drawdown conference call held. A drawdown target of 1.68 feet by the end of February was determined.

    d. January 2009: The level of Lake Winnebago was draw down in accordance to that agreed upon at the 8 January 2009 drawdown conference call.

    e. 9 March 2008: USACE opened 2 gates in anticipation of sleet and rain. Lake Winnebago has about 25" of ice cover. The USACE opened all tainter and needle

gates over the 23-25 March span in response to the basin receiving almost 2" of rain during this timeframe.

f. The Corps held a Refill Conference Call on 8 April 2009 open to all interested parties.

g. 11 April 2009: Official ice-out according to the WDNR.

h. Navigation Season target of 3.0 ft reached on May 29 and maintained through the month of June.

i. May 2009: Gates closed due to dry conditions across the basin.

j. All gates closed by 23 June with abnormally dry conditions experience through July.

k. No significant rain events experienced for the summer. Only 1 gate opening in early August to accommodate a short rain event.

l. September 2009: Opened gate to start gradual decline.

12. **Regulation Strategy, October 2009/September 2010.** Mr. Allis outlined the proposed "plan-of-action" for the next year. He stated that the USACE proposes to follow the suggestions agreed to at the 2009 Fall Water Level Strategy Conference Call held on September 1. At the meeting, it was agreed to draw the lake down from 2.5 ft. on October 15 to 2.2 feet Oshkosh Datum by December 1. After a stable ice cover of several inches forms on the lake, the lake would be further drawn down to 2.0 ft by December 31 and held steady at this level until official drawdown, which usually occurs in early January. This initial lowering of the lake level would reduce the potential for ice damage due to shoves. The extent and timing of the drawdown will be established during a conference call in early January 2010 with experts and interested parties from the local area. When the ice cover has broken up in the spring, the Corps will hold a refill conference call and then begin the spring refill. Mr. Allis reiterated, as in the past few years, we will raise the lake level slowly, raising the lake to a target of 2.4-2.7 feet by May 1 and 2.7-3.0 feet by June 1. The gradual rise is critical to avoid water level spikes above 3.0 in the early spring. Runoff from snow melt and spring rains can raise the level of the lake very quickly.

13. **Detroit District Home Page and Facts Booklet.** Mr. Allis discussed a step-by-step outline for accessing Lake Winnebago information on the Detroit District Home page. He emphasized that this is the data that the USACE analyzes daily to regulate Lake Winnebago. The Lake Winnebago web page is:

    www.lre.usace.army.mil/greatlakes/hh/lakewinebago.

Mr. Allis reported that a few draft copies of the latest version of the Lake Winnebago: Fox-Wolf River Basin "Facts Book" is available for review and/or comment. He said the final version will not be out for a few months. It will also be posted on the USACE website. For hard copies, Mr. Allis suggested emailing him at the following to receive copies as soon as the booklet is published. Mr. Allis' email is:

John.T.Allis@usace.army.mil

14. **Questions and General Discussion.** The first 2 question were made by Bill Hitchcock from Wind Point Harbor. He stated that he would like the level of Lake Winnebago to reach 3.0 ft sooner in the Spring. Ms. Marie Strum responded by stating that there is very little tolerance to address sudden spikes in the water levels due to significant storm events in the spring. Once we reach the desired target of 3.0 ft., we lose the ability to address these sudden spikes. She said this is the reason that the USACE tries to regulate within the 0.3 ft band during the critical spring refill period. Mr. Hitchcock's second question was addressed to Mr. Bob Starks of the Fox River Navigational System Authority. He was concerned with the apparent loss of $15M that was given to the state to rehabilitate the Lower Fox River Locks. Mr. Starks assured Mr. Hitchcock that no State funding was lost. He said he would be glad to discuss this issue further after the meeting.

    Nick Utrup from the U.S. Fish and Wildlife Service noted that fish spawning downstream of the DePere dam is an important event in the spring. Last year the spawning worked well. He suggested that the USACE coordinate with the USFWS prior to the Spring spawning season so that a successful spawn can occur again this year.

15. **Conclusion.** Mr. O'Bryan concluded the meeting by stating that the Lake Winnebago regulation strategy would be continued as discussed and agreed at this meeting. A conference call will be set up for the first week of January 2010 to discuss the results and plan the winter drawdown as proposed at this meeting. Details on the conference call will be mailed to everyone on the Corps' mailing list and posted to the Lake Winnebago website.

16. **Closing Remarks.** Mr. O'Bryan thanked attendees for their attendance and the many productive comments generated during the meeting. The meeting adjourned at 10:20 am. Mr. O'Bryan thanked the meeting participants for taking time to attend this important meeting he explained that it is very important that the Corps continues to communicate with all the interested parties in the basin and listen to their concerns and suggestions.

Attendees

Bill Hitchcock	Wind Pointe Harbor
Tom Wilson	Lake Poygan Sportsman's Club
Tom Buchta	Neenah Harbor Commission
Greg Jansen	Radtke Construction, Inc.
Gary Knapton	Permit Consultant
Steve Brand	City of Oshkosh - Utilities
Bill Murphy	Lunda Construction
Daniel Oudenhaven	Lunda Construction
Chad Casper	Winnebago LWCD
Art Techlow	WDNR
Bob Stark	Fox River Navigation System Authority
Tom Buchholz	WiDOT
Harold R. Miller	Menasha Dock Association
Michael Pedersen	Kaukauna Utilities
Jeff Feldt	Kaukauna Utilities
Nick Utrup	U.S. Fish and Wildlife Service
Melissa Kok	Congressman Petri's Office
Walt Raith	East Central Wisconsin Planning Commission
Tom Konrad	Oshkosh
LTC, James B. Davis	USACE
Michael O'Bryan	USACE
Marie Strum	USACE
Tom O'Bryan	USACE
Jim Bonetti	USACE
David Haefs	USACE
John Allis	USACE
David Barilovich	USACE
Missy Kropfreiter	USACE
Michael Stencil	USACE